AR201-13331B

IUCLID

Data Set

Existing Chemical	:	ID: 68937-41-7
CAS No.	:	68937-41-7
TSCA Name	:	Isopropylated triphenyl phosphate
Producer Related Part		
Company	:	GREAT LAKES CHEMICAL CORPORATION
Creation date	:	04.07.2001
Substance Related Part		
Company	:	GREAT LAKES CHEMICAL CORPORATION
Creation date	:	04.07.2001
Memo	:	
Printing date	:	27.07.2001
Revision date	:	
Date of last Update	:	27.07.2001
Number of Pages	:	20
Chapter (profile)	:	Chapter: 1, 2, 3, 4, 5, 7
Reliability (profile)	:	Reliability: without reliability, 1, 2, 3, 4
Flags (profile)	:	Flags: without flag, confidential, non confidential, WGK (DE), TA-Luft (DE), Material Safety Dataset, Risk Assessment, Directive 67/548/EEC, SIDS

1.0.1 OECD AND COMPANY INFORMATION

Type	:	cooperating company
Name	:	GREAT LAKES CHEMICAL CORPORATION
Partner	:	
Date	:	
Street	:	HIGHWAY 52 N.W., P.O. Box 2200
Town	:	47906 WEST LAFAYETTE, INDIANA
Country	:	United States
Phone	:	317-497-6100
Telefax	:	317-497-6234
Telex	:	27-9428
Cedex	:	

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1.0.2 LOCATION OF PRODUCTION SITE

Name of Plant	:	Great Lakes Chemical Corporation
Street	:	200 Pickens Road
Town	:	25143 Nitro, West Virginia
Country	:	United States
Phone	:	304-755-6300
Telefax	:	
Telex	:	
Cedex	:	
Reliability	:	(1) valid without restriction

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1.0.3 IDENTITY OF RECIPIENTS

1.1 GENERAL SUBSTANCE INFORMATION

Substance type	:	organic
Physical status	:	liquid
Purity	:	= 100 % w/w
Reliability	:	(1) valid without restriction

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1.1.0 DETAILS ON TEMPLATE

1.1.1 SPECTRA

1.2 SYNONYMS

triaryl phosphate, isopropylated
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tris(isopropyl) phenyl phosphate
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1.3 IMPURITIES

1.4 ADDITIVES

1.5 QUANTITY

1.6.1 LABELLING

1.6.2 CLASSIFICATION

1.7 USE PATTERN

Type : industrial
Category : Basic industry: basic chemicals
Reliability : (1) valid without restriction
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1.7.1 TECHNOLOGY PRODUCTION/USE

Type : Production
Reliability : (1) valid without restriction
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1.8 OCCUPATIONAL EXPOSURE LIMIT VALUES

1.9 SOURCE OF EXPOSURE

Memo : During production and use
Reliability : (1) valid without restriction
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1.10.1 RECOMMENDATIONS/PRECAUTIONARY MEASURES

Type : Handling
Remark : Avoid the generation of mists in occupied areas.
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Type : Storage
Remark : Store in closed containers when not in use.
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1.10.2 EMERGENCY MEASURES

Type : accidental spillage
Remark : Keep material out of streams and sewers. Absorb spilled material on commercial oil absorbant or sand. Put the contaminated absorbant into a DOT approved container.
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Type : injury to persons (skin)
Remark : Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.
Reliability : (1) valid without restriction
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Type : injury to persons (eye)
Remark : Flush with water for at least 15 minutes. If irritation occurs and persists, obtain medical attention.
Reliability : (1) valid without restriction
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Type : injury to persons (oral)
Remark : Rinse mouth with water. Dilute by giving one or two glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.
Reliability : (1) valid without restriction
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Type : injury to persons (inhalation)
Remark : Remove to fresh air. if breathing difficulty or discomfort occurs and persists, contact a medical doctor.
Reliability : (1) valid without restriction
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1.11 PACKAGING

1.12 POSSIB. OF RENDERING SUBST. HARMLESS

1.13 STATEMENTS CONCERNING WASTE

Memo : An acceptable method of disposal is to burn in an incinerator in accordance with all local, state, and federal environmental laws, rules, regulations, and other requirements.
Reliability : (1) valid without restriction
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1.14.1 WATER POLLUTION

1.14.2 MAJOR ACCIDENT HAZARDS

1.14.3 AIR POLLUTION

1.15 ADDITIONAL REMARKS

1.16 LAST LITERATURE SEARCH

1.17 REVIEWS

1.18 LISTINGS E.G. CHEMICAL INVENTORIES

Type : TSCA
Additional info :
Reliability : (1) valid without restriction
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2.1 MELTING POINT

2.2 BOILING POINT

Value	:	ca. 220 - 270 ° C at 5.33 hPa
Decomposition	:	
Method	:	
Year	:	
GLP	:	
Test substance	:	as prescribed by 1.1 - 1.4
Reliability	:	(4) not assignable

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2.3 DENSITY

2.3.1 GRANULOMETRY

2.4 VAPOUR PRESSURE

Value	:	= .0346 hPa at 150° C
Reliability	:	(4) not assignable

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2.5 PARTITION COEFFICIENT

Log pow	:	= 5.44 at ° C
Method		other (measured): modified shake flask
Year	:	1979
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Reliability	:	(4) not assignable

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2.6.1 WATER SOLUBILITY

2.6.2 SURFACE TENSION

2.7 FLASH POINT

Value	:	= 199 ° C
Type	:	closed cup
Method	:	other: PMCC
Year	:	
GLP	:	
Test substance	:	as prescribed by 1.1 - 1.4

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2.8 AUTO FLAMMABILITY

Value : = 551 °C at
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2.9 FLAMMABILITY

2.10 EXPLOSIVE PROPERTIES

Result : not explosive
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2.11 OXIDIZING PROPERTIES

2.12 ADDITIONAL REMARKS

3.1.1 PHOTODEGRADATION

3.1.2 STABILITY IN WATER

3.1.3 STABILITY IN SOIL

3.2 MONITORING DATA

3.3.1 TRANSPORT BETWEEN ENVIRONMENTAL COMPARTMENTS

3.3.2 DISTRIBUTION

3.4 MODE OF DEGRADATION IN ACTUAL USE

3.5 BIODEGRADATION

3.6 BOD5, COD OR BOD5/COD RATIO

3.7 BIOACCUMULATION

3.8 ADDITIONAL REMARKS

4.1 ACUTE/PROLONGED TOXICITY TO FISH

Type	:	static
Species	:	Pimephales promelas (Fish, fresh water)
Exposure period	:	96 hour(s)
Unit	:	mg/l
Analytical monitoring	:	no
NOEC	:	c = 3.2
LC50	:	c = 10.8
Method	:	
Year	:	1978
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Method	:	Ten fathead minnows were placed in each of seven test chambers. The pH of the water was held at 7.42, total hardness at 43 mg/l, and total alkalinity at 28 mg/l. Five test concentrations (1.8, 3.2, 5.6, 10.0, and 18.0 mg/l), a solvent control, and a negative control were used in this test. The fish were acclimated for 24 hours prior to the introduction of the test substance. Dissolved oxygen and pH were determined initially and every 24 hours thereafter. The LC50 determination was based on nominal concentrations of the test substance.
Result	:	The 96 hour LC50 was calculated to be 10.8 mg/l with 95% confidence intervals of 8.0 to 14.6 mg/l. Behavioral observations included fish becoming hemmorhagic when exposed to concentrations of 5.6 mg/l and higher. Some minnows exposed to 10.0 mg/l exhibited abnormal surfacing behavor.
Reliability	:	(1) valid without restriction

04.07.2001 (12)

Type	:	static
Species	:	Pimephales promelas (Fish, fresh water)
Exposure period	:	96 hour(s)
Unit	:	mg/l
Analytical monitoring	:	no
NOEC	:	c = 5.6
LC50	:	c = 50.1
Method	:	
Year	:	1979
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Method	:	Ten fish were placed in each of 7 test chambers. The test consisted of exposure to 1 of 5 concentrations of the test substance. Solvent control and negative control groups were included. Water concentrations (nominal) were 5.6, 10.0, 18.0, 32.0, or 56.0 mg/l. Mortality and behavioral changed were monitored during the test.
Result	:	The 96 hour LC50 was calculated to be 50.1 mg/kg with 95% confidence limits of 42.0 to 59.7 mg/l. The 96 hour NOEL was 5.6 mg/l. Behavioral changes included abnormal surfacing and irritation which were observed at doses of 10 mg/l and above.
Reliability	:	(1) valid without restriction

05.07.2001 (13)

Type	:	static
Species	:	Salmo gairdneri (Fish, estuary, fresh water)
Exposure period	:	96 hour(s)
Unit	:	mg/l
Analytical monitoring	:	no
NOEC	:	c < 1
LC50	:	c = 1.6

Method	:	
Year	:	1978
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Method	:	Ten rainbow trout were placed in each of 7 test vessels. Five dose levels were used in addition to solvent and negative control groups. Soft reconstituted water was used having a pH of 7.37, total hardness of 44 mg/l, and total alkalinity of 32 mg/l. The fish were acclimated to the vessel and water for 24 hours before the introduction of the test substance. The determination of an LC50 was based on nominal concntrations.
Result	:	The 96 hour LC50 was determined to be 1.6 mg/l with 95% confidence limits of 1.2 to 2.2 mg/l. Observations of the exposed fish found behavioral changes at concentrations of 1.0 mg/l and higher. Behavioral changes included irritation, twitching, and labored respiration. Inverted erratic swimming was seen in fish exposed to the highest test concentration.
Reliability	:	(1) valid without restriction

04.07.2001 (14)

Type	:	static
Species	:	Salmo gairdneri (Fish, estuary, fresh water)
Exposure period	:	96 hour(s)
Unit	:	mg/l
Analytical monitoring	:	no
NOEC	:	c < 1
LC50	:	c = 2.4
Method	:	
Year	:	1978
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Method	:	Ten rainbow trout were placed in each of 7 test vessels. Five dose groups were used in addition to solvent and negative control groups. The fish were acclimated to the test chamber and water for 24 hours prior to the introduction of the test substance. The water had a pH of 7.35, total hardness of 44 mg/l, and total alkalinity of 32 mg/l. The fish were exposed to one of the following concentrations: 1.0, 1.8, 3.2, 5.6, and 10.0 mg/l. Mortality and behavioral changes were examined daily.
Result	:	The 96 hour nominal LC50 was 2.4 mg/kg with 95% confidence levels of 1.7 to 3.4 mg/l. Exposed fish appeared irritated. Certain fish exposed to the higher doses exhibited twitching and labored respiration. Mortality was observed in all treatment groups.
Reliability	:	(2) valid with restrictions

05.07.2001 (15)

Type	:	static
Species	:	Salmo gairdneri (Fish, estuary, fresh water)
Exposure period	:	96 hour(s)
Unit	:	mg/l
Analytical monitoring	:	no
NOEC	:	c < .56
LC50	:	c = 4.46
Method	:	
Year	:	
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Method	:	Ten rainbow trout were placed in each of the 7 test vessels. The groups consisted of 5 test substance concentrations, a vehicle control, and a negative control. The pH of the water was 7.44, total hardness 42 mg/l, and total alkalinity of 30 mg/l. The fish were exposed to one of the following nominal concentrations of test substance: 0.56, 1.00, 1.90, 3.20, or 5.60 mg/l. The fish were placed in the test vessel and acclimated to the water 24 hours prior to the introduction of the test substance. Mortality and behavioral modifications were noted.

Result	:	The 96 hour nominal LC50 was 4.46 mg/l with 95% confidence intervals of 3.53 to 5.64 mg/l. Exposed fish appeared irritated and exhibied abnormal sounding behavior. Fish exposed to the higher doses swam erratically. Mortality was observed in the two highest dose groups.

05.07.2001 (16)

4.2 ACUTE TOXICITY TO AQUATIC INVERTEBRATES

Type	:	static
Species	:	Daphnia magna (Crustacea)
Exposure period	:	48 hour(s)
Unit	:	mg/l
Analytical monitoring	:	no
NOEC	:	c = .32
EC50	:	c = .83
Method	:	
Year	:	1979
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Reliability	:	(2) valid with restrictions

05.07.2001 (18)

Type	:	static
Species	:	Daphnia magna (Crustacea)
Exposure period	:	48 hour(s)
Unit	:	mg/l
Analytical monitoring	:	no
NOEC	:	c = 1
EC50	:	c = 1.5
Method	:	
Year	:	1979
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Method	:	About 24 hours prior to exposure, 5 daphnids were placed into each of 24 test, 4 control, and 4 solvent control beakers containing water at a pH of 7.51, total hardness of 232 mg/l, and total alkalinity of 147 mg/l. The daphnid were exposed to one of the following nominal concentrations of test substance: 1.0, 1.8, 3.2, 5.6, 10,0, or 18.0 mg/l. Four replicates of each concentration were included in the test. Mortality was determined in each beaker.
Result	:	The 48 hour LC50 was calculated as 1.50 mg/kg with 95% confidence limits of 1.34 to 1.67 mg/l. The 48 hour NOEL was determined as 1.0 mg/l.

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Type	:	static
Species	:	Daphnia magna (Crustacea)
Exposure period	:	48 hour(s)
Unit	:	mg/l
Analytical monitoring	:	no
NOEC	:	c < .56
EC50	:	c = 2.44
Method	:	
Year	:	1979
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Reliability	:	(1) valid without restriction

04.07.2001 (17)

4.3 TOXICITY TO AQUATIC PLANTS E.G. ALGAE

4.4 TOXICITY TO MICROORGANISMS E.G. BACTERIA

4.5.1 CHRONIC TOXICITY TO FISH

4.5.2 CHRONIC TOXICITY TO AQUATIC INVERTEBRATES

4.6.1 TOXICITY TO SOIL DWELLING ORGANISMS

4.6.2 TOXICITY TO TERRESTRIAL PLANTS

4.6.3 TOXICITY TO OTHER NON-MAMM. TERRESTRIAL SPECIES

4.7 BIOLOGICAL EFFECTS MONITORING

4.8 BIOTRANSFORMATION AND KINETICS

4.9 ADDITIONAL REMARKS

5.1.1 ACUTE ORAL TOXICITY

Type	:	LD50
Species	:	rat
Strain	:	Wistar
Sex	:	male/female
Number of animals	:	10
Vehicle	:	
Value	:	> 20000 mg/kg bw
Method	:	
Year	:	1975
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Method	:	Five male and 5 female Wistar rats received a single 20,000 mg/kg oral dose of neat test substance. The animals were observed daily for 14 days, after which they were sacrificed, necropsied, and their organs examined for gross lesions.
Result	:	No male rats died but 4 of the 5 female rats died. Thus the mortality was 4 of 10 animals. No clinical signs were reported. The acute oral LD50 is greater than 20,000 mg/kg.
Reliability	:	(2) valid with restrictions

04.07.2001 (6)

5.1.2 ACUTE INHALATION TOXICITY

Type	:	LC50
Species	:	rat
Strain	:	Wistar
Sex	:	male/female
Number of animals	:	10
Vehicle	:	
Exposure time	:	1 hour(s)
Value	:	> 200 mg/l
Method	:	
Year	:	1975
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Reliability	:	(3) invalid

26.07.2001 (5)

5.1.3 ACUTE DERMAL TOXICITY

Type	:	other: Acute dermal toxicity test
Species	:	rat
Strain	:	Sprague-Dawley
Sex	:	male/female
Number of animals	:	6
Vehicle	:	
Method	:	
Year	:	1990
GLP	:	yes
Test substance	:	as prescribed by 1.1 - 1.4
Method	:	Three male and 3 female Sprague-Dawley rats received the test material by dermal application, at the dose of 2000 mg/kg. The test material was maintained in contact with the intact skin for 24 hours using an occlusive wrap. The skin was observed upon unwrapping and then again daily for 14

		days. Boday weights were obtained on days 1, 3, 7, and 14. A gross necropsy was performed on all animals.
Result	:	There was no mortality. All animals appeared healthy throughout the 14 day observation period. No irritation was observed at any of the application sites. At necropsy, no gross lesions were seen in any of the animals. There was no apparent effect on body weights. The results of this study indicate that the test substance has relatively low acute dermal toxicity.
Reliability	:	(1) valid without restriction
05.07.2001		(3)

Type	:	LD50
Species	:	rabbit
Strain	:	no data
Sex	:	no data
Number of animals	:	10
Vehicle	:	
Value	:	> 10000 mg/kg bw
Method	:	
Year	:	1975
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Reliability	:	(2) valid with restrictions
04.07.2001		

5.1.4 ACUTE TOXICITY, OTHER ROUTES

5.2.1 SKIN IRRITATION

Species	:	rabbit
Concentration	:	100 %
Exposure	:	Semiocclusive
Exposure time	:	24 hour(s)
Number of animals	:	6
PDII	:	
Result	:	not irritating
EC classification	:	not irritating
Method	:	
Year	:	1975
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Reliability	:	(2) valid with restrictions
04.07.2001		

Species	:	rabbit
Concentration	:	100 %
Exposure	:	Semiocclusive
Exposure time	:	4 hour(s)
Number of animals	:	3
PDII	:	
Result	:	not irritating
EC classification	:	not irritating
Method	:	
Year	:	1990
GLP	:	yes
Test substance	:	as prescribed by 1.1 - 1.4
Method	:	One-tenth ml of test substance was placed on the shaved backs of 3 New Zealand rabbits. The test sites were wrapped with gauze which was covered with cheezecloth. The test material was in contact with the skin for

4 hours, after which the animals were unwrapped and the residual test material was removed. The sites were scored at 4.5, 24, 48, and 72 hours after they were unwrapped, using the method of Draize.

Result : No irritation was observed at any of the application sites. The test was terminated after the 72 hour observation. The Primary Irritation Score was 0. The test substance was non-irritating.

Reliability : (1) valid without restriction
05.07.2001 (2)

5.2.2 EYE IRRITATION

Species	:	rabbit
Concentration	:	100 %
Dose	:	.1 ml
Exposure Time	:	
Comment	:	
Number of animals	:	9
Result	:	not irritating
EC classification	:	not irritating
Method	:	
Year	:	1975
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Remark	:	Nine rabbits were treated. The treated eyes of six rabbits were unwashed through the 7 day observation period whereas the eyes of another 3 rabbits were washed about 4 seconds after treatment. The treated eyes were examined at 24, 48, and 72 hours and 7 days after treatment. There was no irritation in any of the treated eyes at any of the observation times.
Reliability	:	(2) valid with restrictions

04.07.2001 (4)

Species	:	rabbit
Concentration	:	100 %
Dose	:	.1 ml
Exposure Time	:	
Comment	:	
Number of animals	:	3
Result	:	slightly irritating
EC classification	:	irritating
Method	:	
Year	:	1990
GLP	:	yes
Test substance	:	as prescribed by 1.1 - 1.4
Method	:	0.1 ml of the the test material was placed in the conjunctival sac of the right eyes of 3 New Zealand white rabbits. Each treated eye was held closed for about 1 second after administration. The eyes were evaluated for irritation using the Draize method at 1, 24, 48, and 72 hours after dosing.
Result	:	Slight conjunctival redness was observed in two treated eyes 24 hours after dosing. The irritation disappeared by the 48 hour observation. The test was terminated at 72 hours. The Primary Eye Irritation Index at 24 hours was 1.3 and at 48 and 72 hours, 0. The test substance caused very slight irritation.

05.07.2001 (1)

5.3 SENSITIZATION

5.4 REPEATED DOSE TOXICITY

Species	:	rat
Sex	:	male/female
Strain	:	Sprague-Dawley
Route of admin.	:	oral feed
Exposure period	:	28 days
Frequency of treatment	:	daily
Post obs. period	:	
Doses	:	0.1, 0.5, and 1.0% of the diet
Control group	:	yes, concurrent no treatment
Method	:	
Year	:	1976
GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Method	:	Forty male and 40 female Sprague-Dawley rats were divided into 4 groups. The 3 treatment groups received the test substance in their diet at either 0.1, 0.5, or 1.0% of the diet for 28 days. The concurrent control group received nontreated diet. Body weights were determined at the start of the study and weekly thereafter. Food consumption was recorded weekly. The animals were observed daily for survival and clinical signs. Gross necropsies were performed at termination. Hematological parameters determined determined for 5 male and 5 female rats include hemoglobin, hematocrit, erythrocyte count, and total and differential leukocytes. Clinical chemistry measurements using 5 male and 5 female rats included BUN, bilirubin, glutamic-pyruvic transaminase, glucose, cholesterol, lactic acid dehydrogenase, total protein, and albumin. Urinalysis on 5 of each sex included pH, glucose, ketones, bilirubin, and occult blood. Organs collected and weighed at necropsy were brain, thyroid, heart, liver, spleen, gonads, and kidney. Histopathological examinations were conducted on the livers and kidneys of the high dose and control animals.
Result	:	Twelve rats died during this study. The mortality was not dose related, since 4 deaths occurred in the low and mid dose groups while 3 deaths occurred in the high dose group. There was one death in the control group. Body weights were depressed only in the high dose female rats. Reduction in food consumption was observed in both male and female animals from the mid and high dose groups. Abnormal hematological values were obtained from the high dose animals and abnormal clinical chemistry measurements were from the mid and high dose animals. Urinalysis was normal for all animals. At necropsy, no gross lesions were observed that were induced by exposure to the test substance. Liver-to-body weight ratios were increased in all dose groups. There were no other treatment related changes observed. The kidneys and livers from the high dose and control animals were processed through histology and examined microscopically by a pathologist. All tissues examined appeared normal.
Reliability	:	(2) valid with restrictions

05.07.2001 (7)

5.5 GENETIC TOXICITY 'IN VITRO'

Type	:	Ames test
System of testing	:	Five strains of Salmonella typhimurium
Concentration	:	
Cycotoxic conc.	:	
Metabolic activation	:	with and without
Result	:	negative
Method	:	
Year	:	1977

GLP	:	no
Test substance	:	as prescribed by 1.1 - 1.4
Remark	:	Five testor stains of Salmonella typhimurium were used to determine the mutagenic activity of the test substance, in the presence and absence of a metabolic activating system. Five dose levels were used, but they are not identified in the abstract. The test substance was not mutagenic in this test.
Reliability	:	(4) not assignable

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5.6 GENETIC TOXICITY 'IN VIVO'

5.7 CARCINOGENITY

5.8 TOXICITY TO REPRODUCTION

5.9 DEVELOPMENTAL TOXICITY/TERATOGENICITY

5.10 OTHER RELEVANT INFORMATION

Type	:	Neurotoxicity
Method	:	An acute neurotoxicity test was conducted in adult domestic hens. A single oral dose of either 3, 5, 7, or 9 g/kg of the test substance was administered to groups consisting of 10 hens each. An additional 18 hens were used for a positive control group that received 0.5 g/kg TOCP. An negative control group of 18 hens that received just corn oil was included in the study. After the single dose, the hens were observed for 21 days for clinical signs. All hens were evaluated daily for ataxia. Body weights were colected on days 1, 7, 14, and 21. A necropsy was performed on all birds sacrificed on day 21. Portions of the cervical, thorasic, and lumbar regions of the spinal cord and the sciatic nerves were collected from each hen, processed through histology, and were microscopically examined for evidence of neuropathy.
Result	:	Marked body weight decreases were observed in the TOCP treated hens and in the hens in the highest treatment group. Transient signs of ataxia appeared in hens from the 3 and 5 g/kg groups but the symptoms disappeared prior to the end of the study. One bird from each of the 7 and 9 g/kg groups showed ataxia at the end of the study. In apparent correspondence to the observed ataxia, one bird in each of the 3 and 7 g/kg groups and 2 birds in the 9 g/kg group showed distinct neuropathological lesions. Certain of the lesions were reported as relatively severe. No ataxia or neuropathological changes were observed in the corn oil control hens. In the TOCP positive control group, 17 of 18 hens showed considerable ataxia and expressed serious neuropathological lesions. In this study, the test substance induced a neurotoxic effect in a small number of the treated hens.
Reliability	:	(1) valid without restriction

27.07.2001 (9)

Type	:	Neurotoxicity
Method	:	A subchronic neurotoxicity study was conducted in adult White Leghorn hen. Ninety-one daily doses of 10, 20, 90, or 270 mg/kg/day were administered by oral gavage to groups of 20 hens. Another 20 hens received daily oral doses of 7.5 mg/kg/day TOCP, the positive control chemical. A vehicle control group als consisting of twenty hens received

daily treatment with corn oil. Hens were observed daily for clinical signs and for mortality. Body weights and food consumption were measured weekly. At the end of the in-life phase the animals were sacrificed, underwent macroscopic examination, and the brains, spinal cords, and peripheral nerves (tibial and sciatic) were removed from 10 hens per group for microscopic examination.

Result : Mortality occurred in all dose groups, as follows: Vehicle control (2), positive control (4), 10 mg/kg/day (3), 20 mg/kg/day (3), 90 mg/kg/day (5), and 270 mg/kg/day (6). There were no clinical signs of neurotoxicity in the vehicle control hens or in the hens that received the lowest two doses of test substance. Four hens in the 90 mg/kg/day group developed ataxia, two of which were sacrificed prior to termination. Nine hens in the 270 mg/kg/day group developed ataxia and had to be sacrificed prior to the end of the study. Body weight loss was observed just in the TOCP hens and in the 90 and 270 mg/kg/day groups. Two hens in the vehicle control group showed significant degeneration at 3 levels of the spinal cord. Significant degeneration of the spinal cord was also seen in the TOCP hens. Degeneration of the spinal cord and peripheral nerves was observed in hens from the 90 and 270 mg/kg/day groups, the severity and incidence showing a dose response relationship.

Reliability : (1) valid without restriction
27.07.2001 (8)

5.11 EXPERIENCE WITH HUMAN EXPOSURE

(1) FMC Corporation Toxicology Laboratory study no. I90-1145. Non-Definitive Primary Eyey irritation Study in Rabbits. 1990

(2) FMC Corporation Toxicology Laboratory study no. I90-1146. Non-definitive Primary Skin Irritation Study in Rabbits. 1990

(3) FMC Corporation Toxicology Laboratory. Non-Definitive Acute Dermal Toxicity Study in Rats. Study no. I90-1144. 1990

(4) Food and Drug Research Laboratories study no.2538a conducted for the FMC Corporation, 1975.

(5) Food and Drug Research Laboratories, Inc., study no. 2538, conducted for FMC Corporation, 1975.

(6) Food and Drug Research Laboratories, Inc., study no. 2538a, conducted for FMC Corporation. 1975

(7) Foster D. Snell, Inc. study. Kronitex K-100 28-Day Oral Administration in Rats. Conducted for FMC Corporation. 1976.

(8) Huntingdon Research Centre Ltd., Study no. 45/84526. The Subchronic (90-Day) Neurotoxicity of C8096-126-1 Phosphate Ester to the Domestic Hen. Conducted for FMC Corproation. 1985.

(9) Huntingdon Research Centre study no. FCC 7/79329. The Neurotoxic Effects of Kronitex 100 on the Domestic Hen. Conducted for FMC Corporation. 1980

(10) Microbiological Associates study, conducted for FMC in 1977.

(11) Saeger, V.W., Hicks, O., Kaley, R.G., Michael, P.R., and Tucker, E.S. Environmental Fate of Selected Phosphate Esters. Environmental Science & Technology 13:840-844, 1979.

(12) Union Carbide Environmental Services Laboratory study no. 11506-07-06. Acute toxicity of K-50 to the fathead minnow. Study conducted for FMC Corporation. 1978

(13) Union Carbide Environmental Services study no. 11506-07-08. Acute Toxicity of K-200 to the Fathead Minnow, Pimephales promelas Rafinesque. Conducted for FMC Corporation. 1979

(14) Union Carbide Environmental Services study no. 11506-07-15. The acute toxicity of K-50 to the rainbow trout. Study conducted for FMC Corporation. 1979

(15) Union Carbide Environmental Services study no. 11506-07-16. Acute Toxicity of K-100 to the Rainbow Trout, Salmo gairdneri Richardson. Conducted for FMC Corporation. 1979

(16) Union Carbide Environmental Services study no. 11506-07-17. Acute Toxicity of K-200 to the Rainbow Trout, Salmo gairdneri. Conducted for FMC Corporation. 1979

(17) Union Carbide Environmental Services study no. 11506-07-24. The acute toxicity of K-50 to the water flea Daphnia magna Straus. Conducted for FMC Corporation. 1979

(18) Union Carbide Environmental Services study no. 11506-07-25. The Acute Toxicity of K-100 to the Water Flea, Daphnia magna Straus. Conducted for FMC Corporation. 1979

(19) Union Carbide Environmental Services study no. 11506-07-26. The Acute Toxicity of K-200 to the Water Flea, Daphnia magna Straus. Conducted for FMC Corporation. 1979

7.1 END POINT SUMMARY

7.2 HAZARD SUMMARY

7.3 RISK ASSESSMENT